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EXPERIMENT STATION,

HANOVER, N. H.,

BULLETIN NO. 15.

PATENT CATTLE-FOODS.

DECEMBER, 1891.

PATENT CATTLE-FOODS.

G. H. WHITCHER.

The analyses made by the Station chemist and reported below are very suggestive to any one who will observe the large quantities of so-called "Concentrated Foods" that are piled in the storehouses of many if not most of our grain dealers. That large quantities are sold no one can doubt, and we know of instances where careful men have been deceived and have purchased considerable quantities, even to the extent of a ton or more of some one of these frauds, paying more than $100.00 per ton, and the fact that such an imposition can be practiced naturally leads to the question, cannot some law be placed on our statutes which shall effectually prevent such swindling?

"Quack horse doctors" and "Concentrated Cattle-Food" manufacturers are twins, and they flourish, not on the ignorance of farmers, but on that lingering remnant of "old times," which made saltpetre and sulphur the universal cure-all for horses and cattle. So far as their food value is concerned the foods below reported are worth only from $20.00 to $25.00 per ton, and while they may be relished by cattle, owing chiefly to the salt they contain, still it would be more economical to buy good corn meal, middlings, cotton seed, etc., at the market price and then furnish the necessary salt at market rates, than to pay such prices as these mixtures are sold for, and so far as the medicinal claim is concerned, we have only to say, that the day will come when cattle and horses will be intelligently treated for diseases, and even the treatment of a "Quack" is better, and certainly cheaper, than the wholesale use of mixtures of unknown composition.

CHEMICAL COMPOSITION.

F. W. MORSE.

Samples of three different cattle-foods, or condition-powders, which have been extensively sold in this State, were bought in the open market and subjected to a chemical analysis. The names of these foods were respectively: Pratt's Food, Weston's Condition Powders, and Climax Food. The results of analysis were as follows:

PRATT'S FOOD.

MANUFACTURED AT PHILADELPHIA, PA.

Price, 75c. per 12 lbs., or $6.00 per 100 lbs.

This food was claimed in the circular to be purely vegetable, to contain no mineral or other poison, and to be neither a medicine nor condition powder. The last claim was well founded, as the following analysis shows. The "food" appears to be wheat middlings, to which has been added some fenugreek and common salt. The analysis shows a composition very much like wheat bran or middlings, with a high percentage of ash, owing to the addition of salt.

The composition of wheat middlings is given in comparison with the composition of the "food."

	Pratt's Food.	Wheat Middlings.
Water,	10.77	12.1
Ash,	6.27	3.3
Crude Protein,	14.42	15.6
Crude Fiber,	5.37	4.6
Nitrogen-free Extract,	56.25	60.4
Fat,	6.92	4.0

The composition of middlings is taken from the Experiment Station Record, Vol. 2, No. 12.

A water solution of the sample was prepared and the only soluble mineral matter found was common salt, of which the food contained 1.9 per cent.

It was not possible to determine the amount of fenugreek present, the odor of which was noticeable.

WESTON'S CONDITION POWDER.

Depot in New York City.

Price, 50c. per package containing 3 lbs.

This was claimed to be a "Medicinal Horse, Cattle and Poultry Food." It was also claimed to contain no saltpetre, resin, antimony or arsenic, and to be purely vegetable.

In appearance, it resembled a mixture of corn meal and cotton-seed meal, and it had a saline taste and strong odor of fenugreek. Below is its analysis compared with the composition of corn meal:

	Weston.	Corn Meal.
Water,	10.80	10 9
Ash,	8.08	1.5
Crude Protein,	15.53	10 5
Crude Fiber,	3.33	2.1
Nitrogen-free Extract,	56.79	69.6
Fat,	5.46	5.4

The figures for corn meal are from Experiment Station Record, Vol. 2, No. 12.

Weston's food contains more protein or nitrogenous matter and more ash than corn meal.

The water solution contained an amount of chlorine equivalent to 4.70 per cent. of common salt, and also showed a trace of sulphuric acid. No other mineral matter was found.

CLIMAX FOOD.

Manufactured at Burlington, Vermont.

Price, $1.00 per 12½ lbs., or $8.00 per 100 lbs.

The circular claimed that "It is not a medicine, but a concentrated food." There were no claims made about its composition.

In appearance it resembled a mixture of fine wheat middlings and wheat screenings, together with a small quantity of caraway or fennel seeds and small bits of a substance like butter-nut or elm bark. It had, like the other samples, a strong saline taste and odor of fenugreek. Its chemical composition was as follows, and is shown in comparison with the figures for cotton-seed meal, which is a really concentrated food, taken from the same source as the figures for middlings and corn-meal.

	Climax.	Cotton seed Meal.
Water,	9.26	8.2
Ash,	18.09	7.2
Crude Protein,	12.74	42.3
Crude Fiber,	5.60	5.6
Nitrogen-free Extract,	53.08	23.6
Fat,	3.23	13.1

This comparison shows that the Climax has only its extremely high percentage of ash to warrant a claim to being a concentrated food. The Climax also contained 5.59 per cent. of sulphur, and in the water solution were found, chlorine, 5.92, sulphuric anhydride, 2.53 and sodium oxide, 8.54 per cent., together with traces of potassium and magnesium and a large amount (qualitatively) of nitric acid. From these data it was calculated that the food might have contained the following substances:

Sodium chloride, or common salt,	9.77 per cent.
Sodium sulphate, or Glauber's salt,	4.50 per cent.
Sodium nitrate, or Chili saltpetre,	3.84 per cent.

From these analyses it it evident that the claims of the manufacturers, with regard to concentrated foods, are without foundation, as neither of the three will approach cotton-seed meal in the percentage of protein and fat. The medicinal substances found are of the cheapest kind. The average price per pound, at which they can be bought in the market, is not so high as the price per pound of the foods.

Fenugreek, the odor of which was very strong in each mixture, is thus spoken of in the *National Dispensary*: "It possesses hardly any other than emollient properties and is used only for poultices."

The *Treasury of Botany* speaks of it as follows: "It is the principal ingredient in most of the quack nostrums, which found

so much favor amongst ignorant grooms and horsekeepers, and is largely used for flavoring the so-called concentrated cattle-foods, and for rendering damaged hay palatable.

In conclusion, it is hoped that the people of this State will be cautious about paying exhorbitant prices, like $8.00 per one hundred ponnds, for so-called "concentrated cattle-foods" when cotton-seed and gluten meals can be purchased for one-sixth of that price, and sulphur, salts, etc., for a few cents per pound.

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